CASE OF SPINAL INJURY.

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On January 19, 1880, a youth, 19 years old, while swinging from a horizontal bar in a gymnasium, fell, striking the floor upon the back of his head and shoulders, rendering him helpless but not unconscious. He was conveyed to his home in a carriage, and a physician summoned, who found him in the following condition: Perfectly conscious and without pain; he was paralyzed from his neck downward. There were no external marks of injury, and no fracture or dislocation of the spinal vertebra was discovered, though suspected. No special treatment was adopted as it was not supposed recovery would follow.

He was able to swallow some liquid nourishment, and within a day or two could feebly move the arms, but not the hands.

The bladder was paralyzed, necessitating the use of a catheter until urethritis ensued, and finally he became incontinent and always remained so. The sphincter of the anus feebly acted preventing incontinence ordinarily.

For weeks he lay in this condition, so feebly nourished that bed sores formed on his back and hips, and from pressure against the foot of the bed, gangrenous sores on the bottom of the heels.

Strychnia internally and faradism externally was the only treatment used.

After some time a gradual improvement was noticed in muscular movements of the upper extremities, especially of the flexor muscles of the arms. The flexors of the forearm acting more powerfully than the extensors caused a state of constant partial flexion of the hand and fingers. Constant practice finally enabled the patient to feed himself, and by holding a pen between the forefinger and middle finger to write. He was never able to use his fingers with sufficient facility to button his garments or tie a cravat.

The muscles of the body were almost useless. He could never raise himself from a prone to sitting posture, but he could partially turn himself towards either side

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but not roll over. The muscles of the lower extremities were of still less use. The movements of these parts were of a spasmodic kind and involuntary. There was a peculiar rigidity of all the muscular structures in this portion of the body, with occasional reflex movements, produced either with or without external irritation.

For instance, the passage of a catheter would cause the limbs to contract violently.

After considerable practice he was enabled to stand, supported by a frame about the hips and the assistance of his arms.

Mechanical and passive motion, with massage and electricity, together with long practice, enabled him to acquire more dexterity in the use of muscles not completely paralyzed.

Commencing in December, 1881, he was treated for some months at Dr. Taylor's establishment in New York. Two years later he was similarly treated, together with hydropathic measures, at Geneva for some months.

From that time until his death, on March 23d, 1892, he had no special treatment.

He finally succumbed to a chronic cystitis, and an autopsy discovered two phosphatic stones in a thickened, contracted bladder.

A resection of the first six cervical vertebræ was made and these I show you to-night.

An inspection of them will show that by a crushing vertical blow the fifth and sixth cervical vertebræ had been forced together, pushing the body of the sixth outward, and occluding about one-half the spinal canal, compressing the spinal cord to at least one-half the normal size in the antero-posterior diameter. These bones are now ankylosed, bony union having taken place between the bodies and the right transverse processes.

The spinous processes are separated more widely than normal, due to the downward and backward displacement of the sixth.

The compression of the spinal cord has, therefore, occurred opposite the sixth vertebra; and, therefore, below this point the functions of the spinal nerves have been seriously impaired.

The spinal cord was hardened in Müeller's fluid, and sent to Dr. G. M. Hammond, of New York, for microscopical examination.